

## APPENDIX A. ECOWISE CERTIFIED PESTICIDE CRITERIA

### The Role of Pesticides in an EcoWise Certified Service

The primary methods of pest management in an IPM service are non-chemical strategies such as sanitation, harborage reduction, and physical, mechanical, cultural, and biological controls. If these strategies are deemed insufficient, unsatisfactory or are not economically viable, chemical control strategies may also be warranted. Pesticides are applied according to relevant laws, instructions on the product label, and EcoWise Certified *Standards for IPM Certification in Structural Pest Management*. Consult *Standards* Section ❖102 for more information.

The EcoWise Certified program seeks to foster responsible pesticide stewardship, especially with respect to limiting the exposure to pesticides of the public, workers, and the environment with its associated non-target organisms. This may entail minimizing the use of specific pesticides.

### Your Company's IPM Toolbox

Companies seeking certification are required to make a list of IPM tools (both chemical and non-chemical) they plan to use in their EcoWise Certified service. The EcoWise Certified Program Manager will review this list to determine if the pesticides listed meet EcoWise Certified Pesticide Criteria. The EcoWise Field Inspector will discuss the products and pesticides on this list with the applicant.

EcoWise Certified may allow formulations of pesticides that do not meet the EcoWise Certified Pesticide Criteria if the formulation is 1) contained within a bait station, 2) applied in a manner in which there is reasonable certainty of no human or other non-target exposure, 3) applied in a manner in which contact with surface or groundwater is unlikely.

### Pesticide Selection Criteria

EcoWise Certified uses the criteria listed below to screen pesticides for use in an EcoWise Certified service. Only active ingredients are screened for most risk categories because the identities of inert ingredients in the formulation are often not available. The exception is acute toxicity, where the EPA requires that the full formulation be tested for lethal effects in animals, usually rats. The testing determines the single dose required to cause death in test animals via ingestion, inhalation, and skin absorption. The testing also evaluates the degree of skin and eye irritation or damage. Results are then classified as Category I - Danger, Category II - Warning, and Category III - Caution. The highest hazard and greatest mammalian toxicity is associated with Category I.

#### I. Products Applied Inside Structures

Restrictions:

1. No US EPA Acute Toxicity Categories I & II

No EPA Category I (Danger) or Category II (Warning) pesticides are allowed. If a pesticide is used that is exempt from registration by EPA, it must not exceed criteria for Category I or II for acute oral, dermal, or inhalation toxicity and skin or eye sensitivity.

2. No Carcinogens

No pesticides with active ingredients classified as known, probable, likely, or possible carcinogens by

- a. US EPA: <http://www.epa.gov/pesticides/carlist/>

- b. The International Agency for Research on Cancer (IARC):  
<http://monographs.iarc.fr/ENG/Classification/index.php>
  - c. The National Toxicology Program (NTP):  
<http://ntp.niehs.nih.gov/?objectid=72016262-BDB7-CEBA-FA60E922B18C2540>
  - d. The California Proposition 65 List:  
[http://www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)
3. No Reproductive or Developmental Toxins
- No pesticides with active ingredients listed as reproductive or developmental toxins on
- a. The Material Safety Data Sheet (MSDS) for the product
  - b. The California Proposition 65 List:  
[http://www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)
4. No Pesticides Containing Cholinesterase Inhibitors (organophosphate pesticides such as chlorpyrifos, diazinon, malathion)
5. Endocrine Disruptors: The EPA has begun an Endocrine Disruptor Screening Program, and as the Agency provides data on various chemicals, EcoWise will add that information to our screening criteria. Chemicals that show evidence of endocrine disruption will not be allowed in an EcoWise Certified service.

## II. Products Applied Outside

Products used outside must meet these additional criteria:

- 7. No active ingredients listed in
  - a. Section 303(d) of the Clean Water Act:  
[http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/303d\\_lists2006\\_epa.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml)
  - b. California's Groundwater Protection List:  
<http://www.cdpr.ca.gov/docs/legbills/calcode/040101.htm#a6800>
- 8. No active ingredients that are considered to be extremely toxic to the following as indicated by the label, MSDS, or EPA data:
  - a. Birds
  - b. Fish
  - c. Bees
  - d. Wildlife
- 9. No active ingredients with an average soil half life greater than 99 days as determined by the Oregon State University (OSU) Pesticide Properties Database (<http://ace.orst.edu/info/nptn/ppdmove.htm>) or other reliable source
- 10. No products likely to contaminate groundwater as indicated by the label.

11. No active ingredients with high soil mobility (i.e., a GUS\* score greater than 3 as determined by the OSU Pesticide Properties Database [<http://ace.orst.edu/info/nptn/ppdmove.htm>] or other reliable source)
12. No active ingredient that is a persistent, bioaccumulative, toxic substance on the US EPA Waste Minimization Priority list: <http://www.epa.gov/osw/hazard/wastemin/priority.htm>

### List of Examples Based on the Selection Criteria

For your convenience, we have compiled a list of products that meet the criteria listed above (or have been exempted by the program). The list can be found on the following pages. It is not meant to be an exhaustive list.

### Not an Endorsement

Listing of a product does not constitute an endorsement; it only reflects that the active ingredient or formulation passes a set of toxicological screening rules or has been exempted by the Program. All pesticides are intended to be toxic, and all pesticides may pose a risk to human health or the environment.

### References

- US EPA, Chemicals Evaluated for Carcinogenic Potential, Science Information Management Branch, Health Effects Division, Office of Pesticide Programs, US EPA, December, 2005. Telephone: (703) 305-5017; <http://www.epa.gov/pesticides/carlist/>
- Prop 65, "Chemicals Known to the State [of California] to Cause Cancer or Reproductive Toxicity," August 1, 2008, [http://www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)
- National Toxicology Program (NTP), US Dept. of Health and Human Services, Public Health Service, National Toxicology Program, Report On Carcinogens, 12th Edition, July 2007. <http://ntp.niehs.nih.gov/>
- International Agency for Research on Cancer (IARC), IARC Monographs Programme on the Evaluation of Carcinogenic Risks to Humans, Complete List of Agents, Mixtures and Exposures Evaluated and their Classification, (monographs.iarc.fr, September 1, 2008). <http://www.iarc.fr/>
- 1998 California 303(d) List and TMDL Priority Schedule. [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/303d\\_lists2006\\_epa.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml)
- Oregon State University Extension Pesticide Properties Database, <http://ace.orst.edu/info/nptn/ppdmove.htm>
- EPA National Toxics Release Inventory (EPCRA Section 313) <http://www.epa.gov/tri/chemical/index.htm>
- CA Groundwater Protection List <http://www.cdpr.ca.gov/docs/legbills/calcode/040101.htm#a6800>
- US EPA Waste Minimization Priority Chemicals. <http://www.epa.gov/osw/hazard/wastemin/priority.htm>
- Pesticide Action Network, Pesticides Database, July 2007, <http://www.pesticideinfo.org>
- San Francisco Department of the Environment <http://www.sfenvironment.org/downloads/library/rovedpesticidesisdeveloped.pdf>.
- Santa Clara County Board of Supervisors. 2002. *An Ordinance of the Board of Supervisors of the County of Santa Clara Adding Division B28 of the Santa Clara Ordinance Code Relating to Integrated Pest Management and Pesticide Use*. Ordinance No. NS-517.70, May 21, 2002. 13 pp.
- Green, T. 2005. *IPM Institute Method of Screening Pesticide Products*. Personal Communication Tom Green, IPM Institute, Madison, WI. November 29, 2005.
- Levitan, L. 2004. Recommended Approved List of Pesticides for use on County of Santa Clara Properties, County of Santa Clara, California. Environmental Risk Program, Cornell University, April 9, 2004. 29 pp. <http://www.environmentalrisk.cornell.edu>

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\* The GUS score is calculated in the following way:  $GUS = \log(\text{average half life in days}) \text{ multiplied by } [4 - \log(Koc)]$  where Koc is a measure of the tendency to bind to soil.

## ECOWISE CERTIFIED PESTICIDE EXAMPLES

This following list was developed to help you create your own IPM Toolbox. Products listed below meet the EcoWise Certified pesticide screening criteria or have been exempted by the Program because of the manner in which they are used. This is not meant to be an exhaustive list.

Another useful reference is the *Directory of Least-Toxic Pest Control Products* containing over 2000 pest control products such as traps, pheromones, biological controls, microbials, and other products, which is published each year by BIRC, PO Box 7414, Berkeley, CA 94707; [www.birc.org](http://www.birc.org).

### List is in alphabetical order by Active Ingredient

Active Ingredient & Percentage	Form	Examples of Product Names (Listed below is only one example of Active Ingredient and Form. Ask your supplier about other products)	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
4-aminopyrine 0.05%	Bait	Avitrol Mixed Grain	Birds	Use as a last resort. Avoid use in places and times that the product is at risk of being consumed by non-target wildlife or domestic animals.	11649-4-AA
abamectin 0.01%	Pressurized Bait	Avert Pressurized Cockroach Bait Formula 1	Cockroaches		499-322-ZA
abamectin 0.05%	Bait Station	Avert Cockroach Bait Station Formula 1	Cockroaches		499-467-AA
abamectin 0.05%	Gel Bait	Avert Cockroach Gel Bait Formula 3	Cockroaches		499-410-AA
abamectin 0.05%	Gel Bait	Avert Gel Bait Formula 2	Cockroaches		499-406-AA
abamectin 0.05%	Flowable Bait	Avert Dry Flowable Cockroach Bait Formula 1	Cockroaches		499-294-ZA
borax 1.3%	Liquid Bait	Advance Liquid Ant Bait	Ants		499-491-AA
borax 5.4%	Liquid Bait	Terro Ant Killer II Liquid Ant Baits	Ants		149-8-ZA
boric acid 5%	Gel Bait	Drax Ant Kill Gel PF	Ants		9444-135-AA (2/23/90)
boric acid 1%		Exterminators Choice	Cockroaches		40849-20202-ZA
boric acid 1%	Liquid Bait	JT Eaton Presents Dr. Moss's Liquid Bait System	Ants		56-72-AA
boric acid 33.3%	Bait (paste or gel)	MRF 2000 (Stapleton's)	Ants, cockroaches		54452-2-ZA
boric acid 35.5%	Dust	Perma-Dust	Cockroaches, crawling insects		499-384-AA
boric acid 5%	Gel Bait	Drax Ant Kill Gel	Ants		9444-131-AA (11/13/89)
boric acid 5%	Granular Bait	Niban FG	Ants, cockroaches, silverfish		64405-2-ZA (10/04/96)
boric acid 5%	Granular Bait	Niban Granular Bait	Ants, cockroaches, silverfish		64405-2-AA (8/14/05)

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boric acid 99%	Dust	Borid	Cockroaches, crawling insects		9444-129-ZA
boric acid 64%	Dust	Zone Defense	Crawling insects		44757-3-ZA
bromadiolone 0.005%	Bait	Contraq All Weather Blocks	Rats	Use only in tamper resistant bait stations. High concern over secondary poisonings;	12455-79-AA
bromethalin 0.01%	Bait	Top Gun All Weather Bait Block	Rats	Use only in tamper resistant bait stations. High concern over secondary poisoning of birds	67517-66-ZA-56
cholecalciferol 0.07%	Bait	Quintox Rat and Mouse Bait	Rats, mice	Use only in tamper resistant bait stations	12455-39-AA
cyfluthrin 20%	Wettable Powder	Tempo 20 WP	Broad spectrum	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	432-1302-AA
deltamethrin	Spray	Many	Broad spectrum	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	
diatomaceous earth 95%	Dust	Concern Diatomaceous Earth Crawling Insect Killer	Cockroaches, ants, fleas, beetles	Avoid inhalation; use in cracks, crevices & wall voids	73729-1-AA-50932
difethialone 0.0025%	Bait	Generation Mini-Blocks	Rats	Use only in tamper resistant bait stations. Unknown secondary poisoning effects.	7173-218-AA
diphacinone 0.005%	Bait	JT Eatons Answer for Control of Pocket Gophers	Gophers	Use only in tamper resistant bait stations. Concern over secondary poisoning	56-57-ZA

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diphacinone 0.005%	Bait	JT Eatons Bait Blocks	Rats	Use only in tamper resistant bait stations. Concern over secondary poisoning	56-41-ZA
disodium octaborate tetrahydrate 6%	Gel Bait	Gourmet Ant Bait Gel	Ants, cockroaches		73766-1-AA (12/01/03)
disodium octaborate tetrahydrate 1%	Liquid Bait	Gourmet Ant Bait Liquid	Ants, cockroaches		73766-2-AA (12/08/3)
disodium octaborate tetrahydrate 1%	Liquid Bait	Uncle Albert's Super Smart Ant Bait	Ants		73340-1-AA
disodium octaborate tetrahydrate 40%	Dust/Wettable Powder	Bora-Care	Wood pests, carpenter ants		64405-1-AA
disodium octaborate tetrahydrate 98%	Dust/Wettable Powder	Flea Nix (Ecology Works)	Fleas, dust mites		67419-1-ZB
disodium octaborate tetrahydrate 98%	Wettable Powder	Mop Up	Ants, cockroaches		9444-132-AA (11/13/89)
disodium octaborate tetrahydrate 98%	Dust/Wettable Powder	Timbor	Beetles, carpenter ants		1624-39-ZC
d-limonene 5.8%	Liquid	Orange Guard	Ants		61887-1-AA
eugenol	Spray	EcoPCO Aerosol	Broad spectrum		exempt 25b
eugenol	Dust	EcoPCO Dust	Broad spectrum		exempt 25b
eugenol	Spray	EcoPCO Wasp Spray	Wasps		exempt 25b
ferric phosphate 1%	Pelletized Bait	Sluggo Slug and Snail Bait	Slugs, snails		67702-3-AA-11656
fipronil 0.001%	Gel Bait	Maxforce FC Professional Ant Bait Gel	Ants		432-1264-ZA
fipronil 0.01%	Bait Station	Maxforce FC Professional Insect Control Ant Bait Stations	Ants		432-1256-AA
fipronil 0.01%	Gel Bait	Maxforce FC Professional Roach Killer Bait Gel	Cockroaches		432-1259-AA
fipronil 0.03%	Bait Station	Maxforce FC Professional Insect Control Large Roach Bait Stations	Cockroaches		432-1258-AA
fipronil 0.05%	Bait Stations	Maxforce FC Professional Roach Killer Bait Stations	Cockroaches		432-1257-AA
hydramethylnon 1%	Bait Station	Maxforce Professional Insect Control Ant Killer Bait Stations	Ants		432-1252-AA
hydramethylnon 1%	Granular Bait	Maxforce Professional Insect Control Fine Granule Insect Bait	Ants		432-1262-AA
hydramethylnon 2%	Bait Station	Maxforce Professional Insect Control Roach Killer Small Bait Stations	Cockroaches		432-1251-AA
hydramethylnon 2.15%	Gel Bait	Maxforce Professional Insect Control Roach Killer Bait Gel	Cockroaches	Use out of reach of humans and pets	432-1254-AA
hydroprene 0.36%	Spray	Gentrol Aerosol	Cockroaches		2724-484-ZA (4/30/99)
hydroprene 9%		Zoecon Gentrol IGR Concentrate	Cockroaches		2724-351-ZA
hydroprene 90.6%		Gentrol Point Source Roach Control Device	Cockroaches		2724-469-ZA
imidacloprid 0.5%	Granular Bait	Maxforce Granular Fly Bait	Flies		432-1375-ZA

Active Ingredient & Percentage	Form	Examples of Product Names (Listed below is only one example of Active Ingredient and Form. Ask your supplier about other products)	Examples of Some Common Target Pests	Use Annotations	CA EPA Reg No
imidacloprid 2.15%	Gel Bait	Pre-Empt Professional Cockroach Gel Bait	Cockroaches		432-1365-AA
indoxacarb 0.1%	Bait Station	Advion Ant Bait Arena	Ants		352-664
indoxacarb 0.05%	Gel Bait	Advion Ant Gel	Ants		352-746
indoxacarb 0.5%	Bait Station	Advion Cockroach Bait Arena	Cockroaches		352-668
indoxacarb 0.6%	Gel Bait	Advion Cockroach Gel Bait	Cockroaches		352-652
lamba-cyhalothrin 9.7%		Demand CS	Broad spectrum	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	100-1066-AA
methoprene 0.5%	Bait	Extinguish Professional Fire Ant Bait	Fire ants		2724-475-ZA
methoprene 1.2%		Zoecon Precor IGR Concentrate	Fleas		2724-352-ZC
methyl anthranilate 14.5%		Rejex-It-Migrate	Birds		58035-9-ZA
methyl anthranilate 40%		Rejex-It Fog Force	Birds		58035-7-ZA
mint oil	Spray	Earth Care Naturals	Ants, cockroaches		exempt 25b
mint oil 4%, 1 % sodium lauryl sulfate	Spray	Victor Poison Free Ant and Roach Killer	Ants, cockroaches		exempt 25b
mint oil 4%, sodium lauryl sulfate 1%	Spray	Victor Poison Free Flying Insect Killer	Wasps		exempt 25b
oxypurinol 1%, xanthine 1%	Bait Station	Cleary Roach Terminal	Cockroaches		1001-73-AA
phenethyl propionate	Spray	EcoPCO Aerosol	Broad spectrum		exempt 25b
phenethyl propionate	Dust	EcoPCO Dust	Broad spectrum		exempt 25b
phenothrin 0.12%, D-trans allethrin 0.129%	Spray	PT Brand Wasp-Freeze Wasp and Hornet Killer Formula 1	Stinging insects	Of high concern as water pollutant. Use only as a last resort. Outdoors: only spot treatments; <u>no</u> applications to vertical or horizontal impervious surfaces; do not apply when rain is predicted in the next 2 days or where irrigation can cause runoff. Indoors: use according to <i>Standards</i>	499-362-ZA

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pheromone	Pheromone trap	Sterling Rescue Yellowjacket Attractant and Trap	Stinging insects		exempt
pheromone	Pheromone trap	Victor PCO Roach Pheromone Trap and Lure	Cockroaches		47629-8-AA
polybutene 49%		JT Eaton 4 the Birds	Birds		8254-3-ZA-56
polybutene 93%		JT Eaton 4 the Birds	Birds		8254-5-AA-56
potash soap 49%	Liquid	M-pede	Africanized bees, insects		53219-6-ZC
potassium laurate 49.5%	Liquid	Safer Insect Killer	Insects		42697-1-ZR
pyriproxifen 0.5%	Bait	Distance Fire Ant Bait	Fire ants		1021-1728-AA-59639
pyriproxifen 1.3%		Archer Insect Growth Regulator	Fleas		100-1111-AA
rosemary oil 10%	Spray	EcoExempt IC	Insects		exempt 25b
spinosad 0.015%	Bait	Conserve Professional Fire Ant Bait (0.015%)	Fire ants		62719-329-AA
spinosad 0.02%	Bait	GF-120 Naturalyte Fruit Fly Bait	Fruit flies		62719-359-AA
spinosad 80%		Entrust	Insects		62719-282-AA
sulfluramid 0.5%	Bait Station	Advance Dual Choice Ant Bait Stations	Ants		499-459-AA
thiamethoxam 0.010%	Gel Bait	Optigard Ant Gel Bait	Ants		100-1260
warfarin 0.025%	Bait	Kaput Rat and Mouse Blocks	Rats, mice	Use only in tamper resistant bait stations	72500-7-AA